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What needs to be done?: Guide in mangrove reforestation

Aquaculture Department, Southeast Asian Fisheries Development Center

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Recommendations

What needs to be done?

Pond culturists should be encouraged to practice semi-intensive farming because it is more economically and ecologically viable. Immediate and massive reforestation of denuded mangrove habitats, enforcement of existing legislation, and promulgation of new laws also should be undertaken. Where remaining mangroves are subject to population pressure, aquaculture technologies that are environmentally sustainable and that allow conservation of the resource may be introduced.

As mentioned in the AFN July-August 1995 issue, recommendations include: **conservation and reforestation,** *(see guide below)* **promotion of ecologically sound aquaculture, and legislation and enforcement.**

Guide in mangrove reforestation

Zonation. Zonation is a vital guide in mangrove reforestation in determining what species are particularly suited to plant in a particular site.

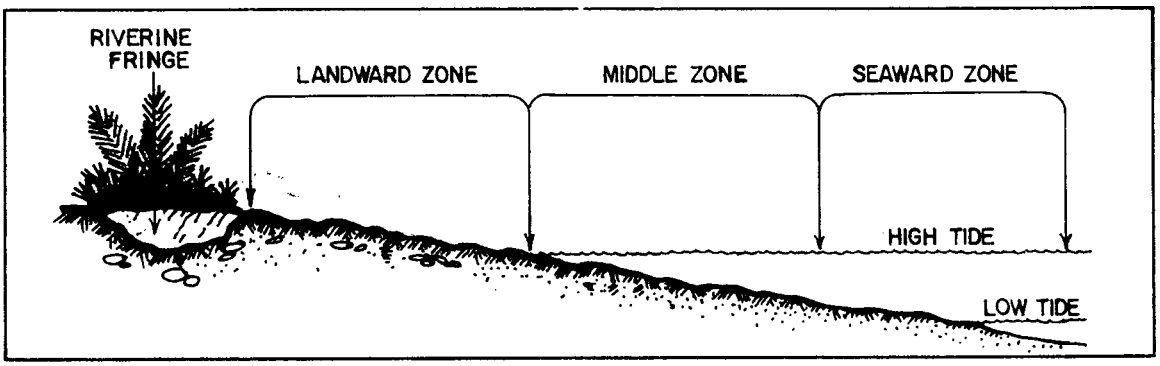
1. ***Seaward zone*** - refers to the portion of the swamps daily affected by tidal inundation including neap tides; species found are generally called frontliners and are the true mangrove type; soils range from sandy to sandy loam, mudflat or corraline type.
2. ***Middle zone*** - refers to portion of mangrove swamps affected daily by tidal inundation except during neap tides. Soil is generally clay, silty to silty-clay.
3. ***Landward zone*** - is the back portion of the mangrove swamps which usually remains unaffected by tidal inundation over a long period except during exceptional high tides called "spring tides." Soil is generally clay to silty clay. Vegetation is highly diverse due to the presence of mangrove associates, vines and epiphytes.
4. ***Riverine fringe*** - are those portions of the swamps along the river system.

Plantation Establishment. The following factors must be considered in the establishment of mangrove plantation:

A. *Identification of the species.* There are several species of mangroves which are widely preferred and planted because they are (1) easily available, (2) easy to plant, grow and maintain with high economic value, and (3) market demand.

B. *Selection of planting site.* In selecting planting site, the following factors must be considered: soil, water depth and tidal inundation, exposure from sun and wind, and absence of barnacles.

C. *Preparation of the planting sites.* Determine the area to be planted and divide it into blocks for easy planting (a space of 7-10 m sea lane shall be provided in between blocks for the passage of banca and other users). Then stake the planting area and surround it with fence. Remove the debris brought in by tidal inundation.



The four distinct zonal distribution of plants in mangrove areas

D. Seed collection. Collect mature and healthy seeds from the nearest source with similar climatic condition. It is best to collect mature seeds while still attached to the mother tree.

E. Handling and transporting of seeds. If possible, retain the pericarp (the brown-like structure enclosing the plumule) to protect the young shoots during handling and transport. Cover the seed with moist gunny sacks of coconut leaves to avoid drying. Keep the seeds in horizontal position.

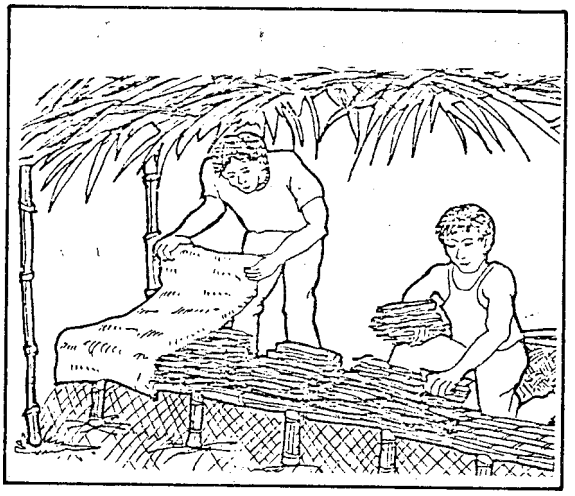
F. Planting

Direct Planting. Direct seeding is recommended to entail less labor and cost. On soft grounds, direct seedings are done through simple planting at 1/3 to maximum of 1/2 of the total length of the hypocotyl. Make holes first on hard grounds and plant 1/4 or 1/3 of total length of hypocotyl buried.

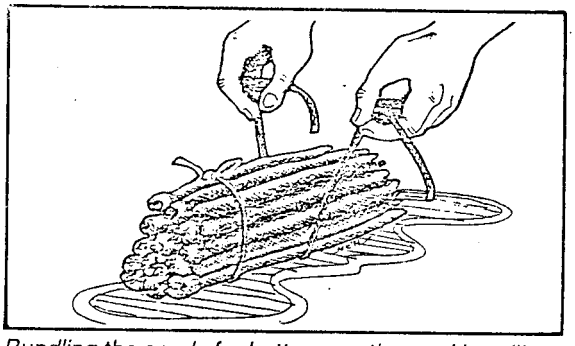
Spacing. The best spacing is 0.5 m x0.5 m with single thinning operation to be conducted at the end of the fifth year to the tenth year.

Timing. Planting should be in proper timing with (1) availability of mature seeds, (2) calm weather, and (3) extensive and longer hours of low tide.

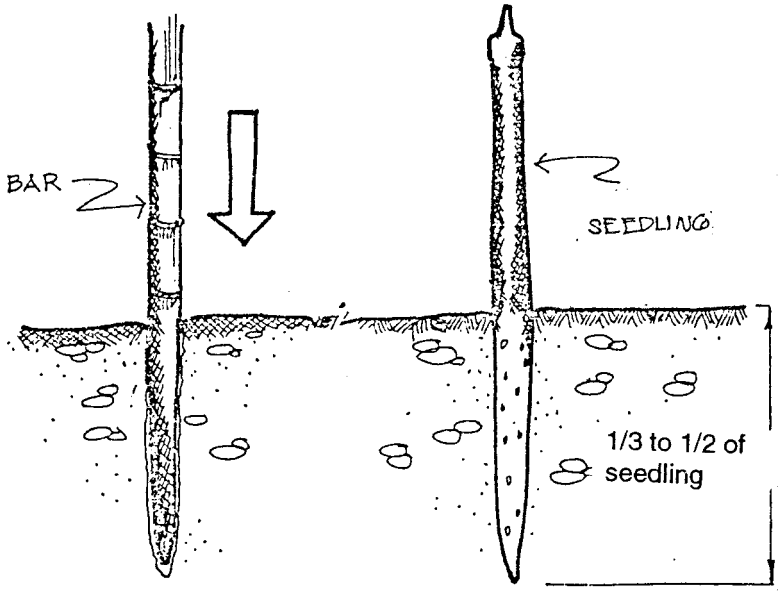
And most importantly, protect and manage properly your mangrove plantation!



Keeping the seeds under the shed and covering them with gunny moist sacks.



Bundling the seeds for better counting and handling



The recommended measurements for direct seeding

Source: ***Guide in Mangrove Reforestations*** *Techno-Transfer Series, DENR-ERDS, Region VI, Iloilo City, Mar-Apr 1990, Vol. 1 No 2.*